REMARKS

With regard to the examiner's objection to the layout of the specification, applicant notes that the section headings specified in 37 CFR 1.77(b) are suggested, not mandatory.

A substitute abstract is submitted herewith. The substitute abstract should remove the objections raised in points 3 and 4 on page 3 of the detailed action.

Applicant gratefully acknowledges that the examiner has indicated that claims 18 and 29-33 contain allowable subject matter. Applicant has amended claim 30 to remove the examiner's objection to that claim.

Claims 1 and 17 stand rejected under 35 USC 102 over Steeg. However, it is believed that Steeg does not disclose all of the features of claim 1 or 17. In this respect, and with respect also to objections raised to other claims, applicant responds as follows.

The examiner asserts that Steeg looks for correlations in the input data and stores these in a computer memory. Applicant uses a device called a correlation matrix memory (CMM), which uses a means of compacting the correlations (called superimposed coding or binary separator patterns) that is different from that given by Steeg. Further information on CMMs may be found in T. Kohonen, "Correlation memory matrix", IEEE Trans. Comput, vol. C-21, pp. 353-359, Apr. 1972. Steeg uses the term "correlation" in its conventional sense, to detect if two events co-occur. Applicant employs a 'Correlation Matrix Memory', which incorporates superimposed coding and separators to overcome the storage problem when storing large numbers of correlations in input data. At no time does Steeg describe or suggest such a method of superimposition of separators within a CMM, and the use of these separators to label the examples stored in the CMM.

The examiner asserts that Steeg teaches a data processor comprising a correlation matrix memory. The examiner refers to Steeg column 9, lines 11-60 and column 28, lines 37-49, but the passages referred to by the examiner do not refer to a correlation matrix memory or to other structures that would allow one to infer that Steeg is referring to a CMM. These passages describe a conventional computer memory to store received input subsets and an output buffer for storing the sub and subsub counts. Applicant employs a CMM to store similar data, with superimposed coding for efficiency.

Steeg also does not suggest the tensoring of the input tuples and superimposition, as now required in claim 1.

The examiner asserts that Steeg uses a matrix to represent data at column 22, lines 19-37. Steeg uses a matrix to represent a temporary input sample. Steeg does not combine the inputs with a separator and superimpose them.

The examiner asserts that Steeg stores the association of each separator with its input data. Steeg does not define a separator in the terms used by applicant. Claim 1 specifies that the separator is used as a column address for the associated set of input data. Accordingly, the separator must be in the form of a bit vector. The bit vector is defined so that the CMM efficiently stores the correlated data.

The examiner asserts that Steeg stores data in a CMM. Again, Steeg does not use a separator as defined by applicant. Thus Steeg's storage method is less efficient than applicant's.

The examiner asserts that Steeg generates separators in a random manner over the objects (from the inputs). In the described embodiment of applicant's invention, the separators are not generated from the input data. They are assigned by the system as a random binary vector with a given bit density. They are, in effect, used as labels that are recalled when the input data is applied to the CMM.

The examiner asserts that Steeg uses a separator generator used to generate separators M bits wide with N bits set. None of the indicated text refers to a binary array (vector) used as a separator as in applicant's claim.

Claim 1 has been amended to specify that the coder codes the tuples by tensoring. Applicant submits that Steeg does not tensor a tuple but uses a simple coder that lists the inputs against sample items. Steeg does not tensor input samples with a separator and then superimpose them.

The examiner asserts in relation to claim 27 that "Steeg teaches wherein the combiner is arranged to combine the coded tuples for a respective set of input data, by superimposition (see column 35, lines 26-55)". This is unrelated to the process of superimposition used by applicant. Applicant uses superimposition to combine binary patterns that represent input or other data.

The examiner asserts in relation to claim 28 that "Steeg teaches wherein at least some of the rows … (column 34, lines 45-56, and column 35, lines 36-55)". These passages identify correlations within a single amino acid sequence. Applicant is concerned with correlations between an unknown input and a stored example through the use of a CMM.

In view of the foregoing, applicant submits that claim 1 is not anticipated by Steeg. Claim 1 is patentable and it follows that the dependent claims 2 and 23-34 also are patentable.

The arguments presented above in support of claim 1, at least regarding the correlation matrix memory, are also applicable to claim 17. Therefore, claim 17 is not anticipated. Claim 17 is patentable and it follows that the dependent claim 18 also is patentable.

The Office Action summary indicates that the Office has not received a copy of the priority document. The image file wrapper contains a certified copy of British Patent Application No. 9914876.9, stamped to indicate that it was received by the US Designated/Elected Office on December 21, 2001. It is requested that the examiner should confirm that a copy of the certified copy of the priority document has been received from the International Bureau.

Respectfully submitted,

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